UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,215	03/15/2004	James R. Hochstein JR.	EH-10961 (03-431)	2037

34704 7590 10/19/2006

BACHMAN & LAPOINTE, P.C.
900 CHAPEL STREET
SUITE 1201
NEW HAVEN, CT 06510

EXAMINER	
CHAUDHRY, SAEED T	

ART UNIT	PAPER NUMBER
1746	

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/801,215	HOCHSTEIN ET AL.	
	Examiner	Art Unit	
	Saeed T. Chaudhry	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) 12-22 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-11 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) 1-22 are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 12/8/05, 4/11/05, 3/29/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restriction

Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I, Claims 1-11, drawn to an apparatus having elongate conduit; an initiator; at least one sensor; and a controller, classified in Class 134, subclass 184.

Group II, Claims 12-16, drawn to a monitoring system having a communications interface; a processor; and a memory coupled to processor, classified in Class 122, subclass 379.

Group III, Claims 17-22, drawn to a method cleaning by at a central location, monitoring data; responsive to said monitored data causing a detonative cleaning, classified in Class 134, subclass 18.

Inventions III and (I, II) are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (M.P.E.P. § 806.05(e)). In this case the process as claimed can be practiced by another materially different apparatus without initiator and sensors.

Inventions I and II are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions have different effect. Invention I, claims 1-11 does not require a communications interface or a memory and invention II, claims 12-16 does not require source of fuel, an initiator or a sensor.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, have acquired a separate status in the art because of their recognized divergent subject matter, the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. William B. Slate on July 18, 2006 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-11. Affirmation of this election must be made by applicant in responding to this Office action. Claims 12-22 are withdrawn from further consideration by the Examiner, 37 C.F.R. § 1.142(b), as being drawn to a non-elected invention.

Joint Inventors

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

The Title

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

Claims 1-11 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, at lines 8-9, recite, "an initiator positioned to initiate a reaction of the fuel and oxidizer to produce the shockwave". It is not clear how and where the initiator is conected to the conduit.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
(c) he has abandoned the invention.
(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States.
(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
(f) he did not himself invent the subject matter sought to be patented.
(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Claims 1-2 and 5 are rejected under 35 U.S.C. § 102(b) as being anticipated by Petrovich et al.

Petrovich (RU-2094728) discloses an apparatus for cleaning heat surfaces having plurality of elongated conduits with first end and second end; a source of fuel and oxidizer (6 and 8); an initiator (2) positioned in the conduit; at least on sensor (18) for sensing hydrodynamic properties with the vessel (15); and control system (16) coupled to electric circuit (19) to the explosion pulse control sensor (17) and the temperature sensors (18) to periodically operating igniters (2) and the locking and regulating valves (1, 10, 11, and 13), see Fig. 1 and translation.

It should be noted that no patentable weight has been given to the preamble/intended use in that the body of the claim fails to recite any limitations that give life and meaning to the preamble/intended use. See MPEP 2111.02.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made

The factual inquiries set forth in Graham v. John Deere Co., 148 USPQ 459, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or unobviousness.

Claims 1-5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Garbus et al in view of Golubov et al.

Garbus et al (SU-32818) disclose an apparatus for cleaning one or more surface of vessel wall having elongate conduit (6) with first end and a second end; a source of fuel (2) and oxidizer (3) coupled to the elongate tube (6); an initiator (4) positioned to initiate a reaction of the fuel and oxidizer to produce the shockwave; and a controller (1) coupled to initiator to initiate the heat pulse to pass through the flame conductor onto the shock tube (6), wherein fuel and oxidizer mixture explodes and explosion products and wave pulse are emanated through the branch 7 for cleaning (see Fig. 1 and translation). The reference fails to disclose sensor associated with the vessel.

In an analogous art, Golubov et al (RU-2054151) disclose an apparatus for cleaning one or more surface of vessel wall having a source of fuel (3) and oxidizer (4) connected to a mixer chamber (5), which is coupled to a pulse chambers (7) by flame conductors (6), the pulse chambers (7) having nozzles (8) which open inwards the boiler. A controller (9) control the flow rate of the fuel and oxidizer. Plurality of sensors (12, 14, 15 and 16) for wall mixer temperature, cool fluid temperature pulse propagation control and inflation control respectively. The apparatus also have a spark plug (initiator, 23), a pulse counter (25) and a cool gas temperature sensor (26) positioned before the heating surfaces. The cooled gas temperature sensor (14) and (26) may be thermocouples or other elements capable of transforming output signal in proportion to changes

in temperature. The control signals generating unit (22) adjust the mixture of fuel and oxidizer by means of unit (9). The unit (9) consist of pressure regulators and flow regulators.

The pulse propagation control sensor (15) mounted on the pulse chamber (7). The sensors can be a detonation wave pulse sensor, a pressure sensor for detecting pressure increase in the pulse chambers during the explosion, a photo-sensor for sensing the flash of explosion of the mixture and an acoustic pressure sensor for detecting acoustic pressure increase within the pulse chambers and with in fuel conduit or besides the pulse chambers or any other sensor responsive to cleaning pulse propulsion (see Figs and translation). The reference fails to disclose an elongate conduit an upstream first end and downstream second end.

It would have been obvious at the time applicant invented the claimed apparatus to incorporate sensors as disclosed by Golubov et al into the apparatus of Garbus et al for the purpose of sensing the thermodynamic properties and operate the apparatus by these properties to improve the quality of cleaning process and optimize the process of cleaning surfaces.

Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garbus et al and Golubov et al as applied to claim 1 above, and further in view of Petrovich.

Garbus et al and Golubov et al were discussed supra. However, the reference fails to disclose plurality of conduits, initiators and a central controller.

In an analogous art, Petrovich (RU-2094728) discloses an apparatus for cleaning heat surfaces having plurality of elongated conduits with first end and second end; a source of fuel and oxidizer (6 and 8); an initiator (2) positioned in the conduit; at least on sensor (18) for sensing hydrodynamic properties with the vessel (15); and control system (16) coupled to electric circuit (19) to the explosion pulse control sensor (17) and the temperature sensors (18) to

periodically operating igniters (2) and the locking and regulating valves (1, 10, 11, and 13), see Fig. 1 and translation.

It would have been obvious at the time applicant invented the claimed apparatus to include plurality of conduits and a main controller as disclosed by Petrovich et al to incorporate a plurality of conduits and a main controller into the apparatus of Garbus et al for the purpose of cleaning plurality of places in the vessel. Further, is well known in the art to duplicate the parts for multiple effects (see St. Regis Paper Co. v. Bemis Co., Inc., 193 USPQ 8, 11 (7th Cir. 1977). Further, it is well known in the art to provide a camera for imaging. Therefore, it would have been obvious at the time applicant invented the claimed apparatus to include a camera to monitor the vessel interior.

The Prior art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Anderson (5,676,712) discloses an apparatus for suppressing deflagration in combustion susceptible gas flow.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (571) 272-1298. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Barr, can be reached on (571)-272-1414. The fax phone number for non-final is (703)-872-9306.

When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1700.

Saeed T. Chaudhry
Patent Examiner

MICHAEL BARR
SUPERVISORY PATENT EXAMINER